Preparation of hyperbranched polymers

Abstract

5 A process for preparing hyperbranched polymers comprises reacting compounds of the formula I

$$\begin{array}{c|c}
R^5 & R^2 & Z^1 \\
R^1 & R^3 \\
R^4 & Z^2
\end{array}$$

where

10

X is sulfur or oxygen,

 R^1 and R^3 are identical or different and are hydrogen, C_1 - C_6 alkyl, C_3 - C_{12} cycloalkyl or C_6 - C_{14} aryl,

15

 R^2 and R^4 are identical or different and are hydrogen, C_1 - C_6 alkyl, C_3 - C_{12} cycloalkyl, C_6 - C_{14} aryl,

 Z^1 and Z^2 are identical or different and are COOH or COOR⁶, the radicals R⁶ being identical or different and being C₁-C₆ alkyl, formyl or CO-C₁-C₆ alkyl,

R⁵ identically or differently at each occurrence is C₁-C₆ alkyl or hydrogen, and

n is an integer from 2 to 10,

25

optionally with at least one compound of the formula I a

$$R^{5}$$
 R^{2} Z^{1} R^{1} R^{1}

where the variables are as defined above,

30

in the presence of a catalyst.